What is claimed is:

1. A path setup device for setting up a label switched path in a label switching network including a plurality of routers, comprising:

a decision device, when a label request is received, deciding whether there exists a label switched path which has already been set up and has the same path as a path corresponding to the label request; and

a label allocation device, when the set-up label switched path exists, allocating the same label as a label of the set-up label switched path for the label request.

2. The path setup device according to claim 1, wherein the decision device decides that the path corresponding to the label request is the same as the set-up label switched path when the path corresponding to the label request and the set-up label switched path coincide with each other in the combination of an ingress router and an egress router and routers located between the ingress router and the egress router.

3. The path setup device according to claim 1, further comprising a label reallocation device performing label reallocation processing, and wherein

the label allocation device allocates the same label for a plurality of forwarding equivalence classes, and when a change has occured in the label switching network for one of the forwarding equivalence classes, the label

5   reallocation device temporarily releases a label allocated to a path between an ingress router and an egress router and performs processing for reperfoming label allocation between the ingress router and the egress router.

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4. The path setup device according to claim 1, further comprising a different-label allocation device, when a request to release the same label as the label of the set-up label switched path is received from a

15   router notified of the same label, performing processing for allocating a label different from the label of the set-up label switched path for a label request corresponding to the same path.

20   5. The path setup device according to claim 4, further comprising a path learning device learning automatically a path that cannot be allocated an identical label and prohibiting allocation of the identical label for the learned path, and wherein when

25   the request to release the same label has been received,

the different-label allocation device notifies the path learning device of the same path and the path learning device learns the notified path as the path that cannot be allocated the identical label.

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6. A computer-readable recording medium recorded with a program for setting up a label switched path in a label switching network including a plurality of routers, the program causing a computer to perform:

10 when a label request is received, deciding whether there exists a label switched path which has already been set up and has the same path as a path corresponding to the label request; and

when the set-up label switched path exists,
15 allocating the same label as a label of the set-up label switched path for the label request.

7. A path setup method for setting up a label switched path in a label switching network including
20 a plurality of routers, comprising:

when a label request is received, deciding whether there exists a label switched path which has already been set up and has the same path as a path corresponding to the label request;

25 when the set-up label switched path exists,

allocating the same label as a label of the set-up label
switched path for the label request; and

when the set-up label switched path does not exist,
allocating a new label for the label request.

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8. A path setup device for setting up a label
switched path in a label switching network including
a plurality of routers, comprising:

decision means for, when a label request is received,

10 deciding whether there exists a label switched path which
has already been set up and has the same path as a path
corresponding to the label request; and

label allocation means for, when the set-up label
switched path exists, allocating the same label as a

15 label of the set-up label switched path for the label
request.